

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF PESTICIDE REGULATION
MEDICAL TOXICOLOGY BRANCH

SUMMARY OF TOXICOLOGY DATA
(E)-4-TRIDECEN-1-YL ACETATE and (Z)-4-TRIDECEN-1-YL ACETATE

Chemical Code # 002199 and 2200, Tolerance # 01064
SB 950 # 254

Original date: 4/8/02

I. DATA GAP STATUS

Chronic toxicity, rat:	Data gap, no study submitted.
Chronic toxicity, dog:	Data gap, no study submitted
Oncogenicity, rat:	Data gap, no study submitted.
Oncogenicity, mouse:	Data gap, no study submitted.
Reproduction, rat:	Data gap, no study submitted.
Teratology, rat:	Data gap, no study submitted.
Teratology, rabbit:	Data gap, no study submitted.
Gene mutation:	No data gap, no adverse effect.
Chromosome effects:	No data gap, no adverse effect.
DNA damage:	No data gap, no adverse effect.
Neurotoxicity:	Not required at this time

Toxicology one-liners are attached.

All record numbers through 113813 were examined.

** indicates an acceptable study.

Bold face indicates a possible adverse effect.

File name: T020408

Original: Kishiyama and Gee, April 8, 2002

The "Reregistration Eligibility Decision (RED) Tridecenyl Acetates" was published by USEPA in October of 1996. These compounds are sex attractant pheromones for tomato pinworms. All formulations have the tridecenyl acetates imbedded in a matrix. When used at less than 150 grams per acre, they are

II. TOXICOLOGY ONE-LINERS AND CONCLUSIONS

These pages contain summaries only. Individual worksheets may contain additional effects.

COMBINED, RAT

No study submitted.

CHRONIC TOXICITY, RAT

No study submitted.

CHRONIC TOXICITY, DOG

No study submitted.

ONCOGENICITY, RAT

No study submitted.

ONCOGENICITY, MOUSE

No study submitted.

REPRODUCTION, RAT

No study submitted.

TERATOLOGY, RAT

No study submitted.

TERATOLOGY, RABBIT

No study submitted.

GENE MUTATION

** 1064 - 003 113813 Lawlor, T. E. "Mutagenicity Assay on Tomato Pinworm Pheromone [E/Z-4-Tridecen-1-yl Acetate] in the *Salmonella*/Mammalian-Microsome Reverse Mutation Assay [Ames Test] with a Confirmatory Assay." (Hazleton Washington, Study No.: 12589-0-401R, May 14, 1991.)

E/Z-4-Tridecen-1-yl acetate (96:4, E/Z, 99%) was evaluated at concentrations of 0 (ethanol), 3.33, 10.0, 33.3, 100, 333, 1000, and 5000 µg/plate with and without rat liver metabolic activation (S9 Mix) to determine the potential to induce reverse mutation in *Salmonella* strains TA 1535, TA1537, TA1538, TA99, and TA100. There were triplicate plates in three trials. No significant increase in the number of revertants for Pheromone E/Z-4-Tridecen-1-yl Acetate [TPW 901203] (with and without metabolic activation) was reported. ACCEPTABLE. (Kishiyama and Gee, 4/5/02).

1064 - 002 037216 Jagannath, D. R.. "Mutagenicity Evaluation of Tomato Pinworm 96% E-4-Tridecenyl Acetate, 4% Z-4-Tridecenyl Acetate in the *Salmonella*/Mammalian/Microsome Plate Test." (Litton Bionetics, LBI Project No. 20988, August 1980.) E-4-Tridecenyl Acetate (96%) and Z-4-tridecenyl acetate (4%) together were evaluated at concentrations ranging from 0.005 to 50 µl/plate with and without rat liver metabolic activation (S9 Mix) to determine the potential to induce reverse mutation in *Salmonella* strains TA 1535, TA1537, TA1538, TA99, and TA100. There was a single plate per concentration in a single trial, except for a repeat trial with TA1538 due to an increase in revertants in the control. No significant increase in revertants was reported. Positive controls were functional. UNACCEPTABLE (inadequate number of replicates, selection of highest concentration was not adequately justified). Not upgradeable. (Kishiyama and Gee, 4/5/02).

** 1064 - 016 135415 San, R. H. C. and T. L. Staton "Salmonella/mammalian-microsome plate incorporation mutagenicity assay (Ames Test)." (Microbiological Associates, Study No. TC557.501, 11/12/92) Tomato Pinworm Pheromone (Lot Nos. 36436-07 and 35686-67-1, > 98%) was tested with *Salmonella typhimurium* strains TA98, TA100, TA1537, TA1538 and TA1535 with and without rat liver activation at 0 (ethanol), 33, 100, 333, 1000, 3333 or 5000 ug/plate, in triplicate with two trials. There was slight cytotoxicity at mid to high concentrations with a slight precipitate forming at ≥ 1000 ug/plate. No increase in reversion rates. ACCEPTABLE. (Adapted from Duncan and Moore, 4/21/95, by Gee, 4/8/02)

** 1064 - 008 127632 Lawlor, T. E. and C. D. Reppress "Ames Salmonella/microsomal reverse mutation assay." (Hazleton Laboratories America, HLA 11099-0-401, 12/27/89) E/Z-4-tridecenyl acetate, 96/4% respectively, Tomato Pinworm Pheromone, was tested with *Salmonella* strains TA98, TA100, TA1535, TA1537 and TA1538 by plate incorporation at concentrations of 0 (ethanol), 333, 667, 1000, 3330, 6670 or 10000 ug/plate without activation and at 0, 10, 50, 100, 500, 1000 or 10000 ug/plate with rat liver activation. There were triplicate plates in a single trial. A slight precipitate formed at 667 and above without activation and at 1000 and 10000 ug/plate with activation. Positive controls were functional. There was no increase in reversion rate with treatment. ACCEPTABLE. (Gee, 4/8/02)

CHROMOSOME EFFECTS

** 1064 - 003 113809 Murli, H. "Measuring Chromosomal Aberration in Chinese Hamster Ovary (CHO) Cells." (Hazleton Washington, HWA Study No.: 12589-0-437, February 13, 1991.) Z/E-4-Triceden-1-yl Acetates (4:96, 99%) were evaluated at concentrations ranging from 3.12 to 12.5 µg/ml in a 10 hour assay and 12.7 to 50.7 µg/ml in a 20 hour assay without metabolic activation. With activation,

concentrations were from 9.35 to 37.5 µg/ml in a 10 hour assay and 38.0 to 152 µg/ml in a 20 hour assay with metabolic activation for the ability to induce chromosomal aberrations in Chinese hamster ovary (CHO) cells. Ethanol was the solvent used. One hundred cells per replicate culture per concentration were scored. Concentrations of 50.7

µg/ml and higher were too toxic to score. Positive controls were functional. Z/E-4-tridecen-1-yl acetate did not induce chromosomal aberrations. ACCEPTABLE. (Kishiyama and Gee, 4/5/02).

DNA DAMAGE

** 1064 - 003 113811 McKeon, M. E. "Assay of E/Z-4-Tridecen-1-yl Acetates for Unscheduled DNA Synthesis in Rat Liver Primary Cell Cultures." (Hazleton Washington, HWA Study No.: 12589-0-447, March 29, 1991.) Z/E-4-Tridecen-1-yl Acetate (4:96, >99%) Tomato Pinworm Pheromone, was evaluated at concentrations of 0 (ethanol), 10.2, 25.5, 51.0, 102, 255, and 510 µg/ml to determine potential DNA damage/repair by measuring UDS in rat primary hepatocytes using autoradiography. Hepatocytes were exposed for 19.1 hours before processing. There was one trial with three replicates per concentration for UDS and 2 for cytotoxicity by trypan blue dye exclusion. The test material was insoluble in media above 51.0 µg/ml. Viability of the initial hepatocytes was acceptable. The positive control, 2-acetyl-aminofluorene, was functional. No increase in net nuclear grain count with E/Z-4-Tridecen-1-yl Acetate treatments was reported under the conditions of the assay. ACCEPTABLE. (Kishiyama and Gee, 4/5/02).

NEUROTOXICITY

Not required at this time.